Blending coral restoration science and practice: A novel approach to *Acropora* population enhancement.

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Abstract

Florida and Caribbean coral reefs are in a state of unprecedented decline. Reefs once dominated by branching, hard-coral species, *Acropora cervicornis* and *A. palmata*, have lost upwards of 98% of Acroporid cover in recent decades. This decline is attributed to multiple, compounding factors. As these threats continue, there is a clear need for innovative methods to bolster remaining populations thus signaling to managers that intervention is needed to support recovery of the species. The urgency around coral decline has prompted practitioners to try a variety of restoration techniques. While promising, efforts need to incorporate best-practices of supporting genetic diversity, ecological function, and resiliency for successful coral restoration outcomes.

Herein we present novel approaches to coral population enhancement (coral restoration) that blend science and practice. Guided by NOAA's *Acropora* Recovery Plan, we have implemented an ambitious restoration plan to outplant 50,700 corals using both *Acropora* species across eight reefs along the Florida Reef Tract. The restoration strategies presented here are designed to meet several population-based recovery objectives and criteria identified in the *Acropora* Recovery Plan including: increasing abundance, promoting genetic diversity, promoting recruitment, and disease mitigation (as informed by monitoring).

Key words:
Coral Reefs. Restoration. Acropora. Recovery.

Short description:
Novel approach to coral restoration, marring research with practice, in an effort to achieve *Acropora* restoration success at an unprecedented scale.